5(4)

AUTHORS: Levich, V. G., Corresponding Member, AS USSR, Dogonadze, R. R. SOV/20-124-1-34/69

TITLE: The Theory of the Radiationless Electron Transitions Between Ions in Solutions (Teoriya bezyzluchatel'nykh elektronnykh perekhodov mezhdu ionami v rastvorakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 123-126 (USSR)

ABSTRACT: According to the authors' opinion, all theoretical papers dealing with this subject neglected to take proper account of the influence exercised by the solvent. In the present paper the solvent is considered to be a set of atoms which perform small oscillations round fixed positions of equilibrium. In the case of an electron transition that is considered to be a radiationless transition of the complete electron-solvent system, a certain number of oscillation quanta (phonons) is absorbed (or emitted). Calculations were carried out in adiabatic approximation and the atoms of the solvent were selected in form of a slow subsystem and the electron as a fast subsystem. The Hamiltonian of the complete system $H(x, q) = H(x) + H(q) + V(x, q)$ consists of the electron part

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$H(x) = -(\hbar^2/2m)\nabla^2 + U(x, R)$, of the Hamiltonian of the oscillating atoms $H(q) = (1/2)\sum_{\varkappa} \hbar\omega_{\varkappa}(q^2_{\varkappa} - \frac{\partial^2}{\partial q^2_{\varkappa}})$ and of the energy of the interaction between electron and phonon. The coordinates x and q refer to the electron and phonon respectively. The potential U(x, R) describes the interaction between the electron and the ions between which there is a distance R, and between the electron and the static part of the solvent polarized by them. V(x, q) can be expanded in a series according to the powers of the small deviations of the atoms of the solvent from the positions of equilibrium. An expression is then derived for the total energy of the system. If the optical branch plays the principal part in electron-phonon interaction, the dispersion of frequencies and the anharmonic condition can be neglected. The rather long formula for the corresponding transition probabilities is explicitly written down. Finally, the acoustic branch is investigated. For the liquids under investigation it is of importance to take the

The Theory of the Radiationless Electron Transitions Between Ions in Solutions SOV/20-124-1-34/69

anharmonic condition into account. Also for this case a formula for the transition probability is written down. If the acoustic branch plays the essential part, deviation from linearity begins at~240° K. There are 10 references, 2 of which are Soviet.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry of the Academy of Sciences, USSR)

SUBMITTED: August 29, 1958

Card 3/3

84634

S/076/60/034/010/016/022
B015/B064

188300 1530, 1138, 1454

AUTHORS: Dogonadze, R. R., Levich, V. G., Chizmadzhev, Yu. A.

TITLE: Theory of the Electrochemical Protection. II. Reactions With Diffusion Control 18

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 10, pp. 2320 - 2327

TEXT: In a previous paper (Ref. 1), the authors determined the distribution of the potential in a system consisting of a metal (cathode) and a protector (anode), however, without taking account of the concentration polarization. In practice, however, metal corrosion frequently takes place in the presence of dissolved oxygen. The oxygen concentration may, however, be so low that the total rate of the corrosion process in the system metal - protector depends on the access velocity of oxygen. The present paper investigates this case. Since the access of oxygen in mixing through the solution (which is mainly the case in practice) depends on the convective diffusion, the most simple case, i.e. the convective diffusion to the surface of a rotating metal disc which is in the center of the

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Theory of the Electrochemical Protection. II. Reactions With Diffusion Control

S/076/60/034/010/016/022
B015/B064

protector, was chosen. In contrast to the experiments by Wagner (J.Electrochem.Soc. 24, 380,1957), in the present case the diffusion current has the same value in all points of the system. The conditions are discussed under which it is possible to separate the surface of the protected metal into diffusion- and kinetic regions, and the corresponding equations are derived. By means of the Legendre polynomials equations are derived for the case in which the metal can be regarded as non-polarizable in the kinetic region. There are 2 figures and 6 references: 5 Soviet and 1 US.

ASSOCIATION: Akademiya nauk SSSR Institut Elektrokhimii (Academy of Sciences of the USSR Institute of Electrochemistry)

SUBMITTED: February 5, 1959

Card 2/2

84705
S/020/60/133/006/011/016
B004/B064

54700 2209, 1241 only

AUTHOR: Dogonadze, R. R.

TITLE: The Reaction Rate of the Electron Exchange in Solutions

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1368-1371

TEXT: In previous papers (Refs. 1,2), the author calculated on the basis of the adiabatic perturbation theory the probability $w_{12}(R)$ for the transition of one electron (per unit time) between two ions, with the same charge sign, that are at a distance R from each other. It is the aim of the present investigation to establish a relation between w_{12} and the constant k_{12} of the reaction rate. The author chooses reaction $Fe^{2+} + Fe^{*3+} \longrightarrow Fe^{3+} + Fe^{*2+}$ (1) for an example. The concentrations of these ions be c_2, c_2^*, c_3, and c_3^*. For the number of Fe^{*2+} ions that formed per unit volume dv in the time dt, the following equation is written down:

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B004/B064

The Reaction Rate of the Electron Exchange in Solutions

$dc_2^* = (c_2 \rho + c_2^* \rho^*)dt$ (2). ρ is the probability for the transition from Fe^{2+} into Fe^{3+}. The number of Fe^{*3+} ions in dv being at a distance R from an Fe^{2+} ion is: $c_3^* \exp\left[- \psi(R)/kT \right] dv$, where $\psi(R)$ denotes the energy of the interaction between Fe^{2+} and Fe^{*3+}. Herefrom follows for ρ: $\rho = \int w_{21}(R) c_3^* \exp\left[- \psi(R)/kT \right] dv \equiv k_{12} c_3^*$ (3), and a similar equation (4) for ρ^*. By introducing (3) and (4) into (2) the following is obtained: $dc_2^*/dt = k_{12}(c_2 c_3^* - c_2^* c_3)$ (5). The solution of this equation for the initial conditions ($t = 0$, $c_2 = c_{20}$, $c_3^* = c_{30}^*$, $c_2^* = c_3 = 0$) yields: $\ln \left[1 - (c_{20} + c_{30}^*) c_2^*/c_{20} c_{30}^* \right] = -k_{12}(c_{20} + c_{30}^*)t$ (9). This equation goes over at $t \longrightarrow \infty$ into the equation (11) obtained by H. A. C. McKay (Ref. 3). On the assumption of approximation $\psi(R) = 6e^2/\varepsilon_s R$ (13), (ε_s = static dielectric constant) expression: $k_{12} = 4\pi \int_0^\infty w_{12}(R) \exp(-6e^2/\varepsilon_s RkT) R^2 dR$ (14) is written down, and by introducing the expression obtained for w_{12} in Ref. 2 equation

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The Reaction Rate of the Electron Exchange in Solutions

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(15) is obtained: $k_{12} = (kT/h) \int_0^\infty \left[512\pi^6/\hbar^2\omega_0^2 kTc \int (\vec{D}_1 - \vec{D}_2)^2 d\vec{r}\right]^{1/2} |L_{21}^{(2)}|^2 \exp\left[-(\Delta F^* + 6e^2/\varepsilon_s R)/kT\right] R^2 dR$. $L_{21}^{(2)}$ is the exchange integral, $\vec{D}_1$, $\vec{D}_2$ the induction of the electrostatic field of the electron at the beginning and at the end of the reaction, $c = 1/\varepsilon_0 - 1/\varepsilon_s$, where ε_0 denotes the optical dielectric constant. $\Delta F^{\neq} = \Delta F^*(\bar{R}) + 6e^2/\varepsilon_s \bar{R}$ (19) is written down for the free activation energy, and for the activation energy $\Delta E^{\neq} = \Delta E^*(\bar{R}) + 6e^2/\varepsilon_s \bar{R} = (c/32\pi) \int \left[\vec{D}_1 - \vec{D}_2\right]^2 dr + 6e^2/\varepsilon_s \bar{R}$ (21). By using a model suggested by R. A. Marcus (Ref. 4) $\Delta E^{\neq} = 6e^2/\varepsilon_s \bar{R} + (ce^2/4)(1/a - 1/\bar{R})$ (23) is obtained. The wave function of the electron is written down for reaction (1) with Slater functions: $\psi_1(\vec{r}) = \psi_2(\vec{r} + \vec{R}) = \psi_{3d_{z^2}} = 1/3\alpha^3 \sqrt{2\alpha/\pi}\, r^2 \cdot \exp(-\alpha r) \cdot \cos^2\vartheta$ (24), where $\alpha = z_{eff}/n_{eff} a_0 \varepsilon_s = 6.25/3a_0\varepsilon_s$ (a_0 = Bohr's radius). Moreover, the equation for the exchange integral is written down, and equation (28) for k_{12} obtained. For the exchange of an electron between isotopes with

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charges z and z + 1 the condition $\varepsilon_s < \varepsilon_0(2z + 1)^2$ (30) is given. This means $\varepsilon_s < 45$ for reaction (1). According to data of K. J. Laidler (Ref. 6) this holds for $R < 5$ A. Accordingly, the most probable value for R is 4 A. The author points out the agreement between the value $\Delta F^{\ddagger}$ = 9.8 kcal/mole obtained by Marcus, that one calculated according to the author's theory $\Delta E^{\ddagger}$ = 9.8 kcal/mole, and the experimental value $\Delta E^{\ddagger}_{exp}$ = 9.9 kcal/mole. There are 6 references: 3 Soviet, 1 US, 1 British, and 1 Canadian.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry of the Academy of Sciences USSR)

PRESENTED: April 1, 1960, by A. N. Frumkin, Academician

SUBMITTED: March 29, 1960

Card 4/4

DOGONADZE, R. R., CAND PHYS-MATH SCI, "ADIABATIC THEORY OF ELECTRONIC PROCESSES IN SOLUTIONS." MOSCOW, 1961. (MIN OF HIGHER AND SEC SPEC ED RSFSR. MOSCOW ENG PHYS INST). (KL, 2-61, 198).

S/181/61/003/012/023/028
B108/B138

24,7700 (1144, 1160, 1164)

AUTHORS: Dogonadze, R. R., and Chizmadzhev, Yu. A.

TITLE: Electrical conductivity of polar crystals with low carrier mobility. I. Structure of energy spectrum

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3712-3719

TEXT: In semiconductors with low carrier mobility, carrier mobility u rises with temperature approximately as $u \sim \exp(-E^*/kT)$. This dependence bears activation character. In second quantization, the Hamiltonian of a polar crystal has the form

$$H = \frac{p^2}{2m} + U_0 + \frac{\hbar\omega}{2}\sum_k (a_k a_k^+ + a_k^+ a_k) + \sum_k A_k (a_k^+ e^{-ikr} - a_k e^{ikr}), \quad (6)$$

$$A_k = i\left(\frac{2\pi e^2 c\hbar\omega}{k^2 V}\right)^{1/2}. \quad (7).$$

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Electrical conductivity of polar ...

The problem is solved under the following assumptions: (1) strong interaction between electron and lattice, (2) electrons are considered in strong-bond approximation, (3) the system consists of a fast (electron) and a slow (lattice) subsystem. The solution is found in the form of a linear combination of localized polaron wave functions on the basis of the invariance of the Hamiltonian (6) with respect to translational transformations:

$$\Psi_{\sigma,..N_k...} = L^{-3/2}\sum_{n} e^{i\sigma\vec{n}}\,\chi_n(\vec{r}-\vec{n})\chi_n(...N_k...) \qquad (16)$$

where the $\chi_n(...N_k...)$ are solutions of the equation, (J = 0),

with

$$(H_{0n}-E)\chi_n = I\sum_i \chi_{n\pm a_i}; \quad i=1, 2, 3, \qquad (10)$$

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Electrical conductivity of polar ...

$$H_{0n}=\frac{\hbar\omega}{2}\sum_k[(a_k^+ + v_{kn}^*)(a_k + v_{kn}) + (a_k + v_{kn})(a_k^+ + v_{kn}^*)] + \varepsilon_0,$$
$$\varepsilon_0=\varepsilon_e-\hbar\omega\sum_k|v_{kn}|^2; \qquad (11)$$

$$v_{kn}=\frac{A_k}{\hbar\omega}\int|\varphi_n|^2 e^{-ikr}dv, \qquad (12)$$

$$I=-\int\varphi_n^* U(\mathbf{r}-\mathbf{n})\varphi_{n+a}dv. \qquad (8)$$

and the eigenfunctions of the Hamiltonian (6)

$$\Psi=\sum_n\chi_n\varphi_n(\mathbf{r}), \qquad (9),$$

where φ_n is the orbital at the atom n. The polaron energy spectrum is calculated:

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Electrical conductivity of polar ...

$$E_{\sigma,N_k} = E_N + 2I(\cos \sigma a_1 + \cos \sigma a_2 + \cos \sigma a_3) e^{-S(N_k)}, \quad (32)$$

$$S(N_k) = 2 \sum_k |v_{kn}|^2 \sin^2 \frac{ka}{2} (2N_k + 1). \quad (33)$$

where $E_N = \epsilon_0 + Q + \frac{1}{2} \hbar\omega \sum_k (2N_k + 1)$. Q is the so-called Coulomb correction to ϵ_0. Each level $E_{N,\lambda}$ splits into a band of width

$$\Delta E_{\sigma,N,\lambda} = 12 \, I \exp(-S(N,\lambda)).$$

The wave function $\Psi_{\sigma,N,\lambda}$ in Eq. (16) is only an approximate eigenfunction of the Hamiltonian (6). This leads to the $\sigma \rightarrow \sigma'$ scattering whose probability will be calculated in the second part of this work ($\vec{\sigma}$ = quasimomentum). The authors thank V. G. Levich, Corresponding Member

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Electrical conductivity of polar ...

AS USSR, V. L. Bonch-Burevich, V. M. Galitskiy, S. I. Pekar, and S. V. Tyablikov for advice and discussions. Academician A. F. Ioffe (FTT, 1, 1, 1959) is mentioned. There are 1 figure and 9 references: 4 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: J. Yamashita, T. Kurosawa. J. Phys. Chem. Sol., 5, 34, 1958; H. Fröhlich, G. L. Sewell. Proc. Phys. Soc., 74, 643, 1959; J. Yamashita, T. Kurosawa. J. Phys. Soc. Japan, 15, 802, 1960; R. Kubo, Y. Toyozawa. Progr. Theor. Phys., 13, 160, 1955.

ASSOCIATION: Institut elektrokhimii AN SSSR Moskva (Institute of Electrochemistry AS USSR, Moscow)

SUBMITTED: March 18, 1961 (initially) July 11, 1961 (after revision)

Card 5/5

32089
S/181/61/003/012/024/028
B108/B138

24.7700 (1144, 1160, 1164)

AUTHORS: Dogonadze, R. R., Chernenko, A. A., and Chizmadzhev, Yu. A.

TITLE: Electrical conductivity of polar crystals with low carrier mobility. II. Calculation of mobility

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3720-3730

TEXT: In the first part of this work(FTT, v. 3, no. 12, 1961, 3712-3719) it was established that the wave function obtained for the band polaron was not an exact eigenfunction of the Hamiltonian, leading to the scattering of the band states. The scattering probability is calculated with the Dirac perturbation theory (strong electron-phonon interaction). On the basis of these calculations, the expression

with $$dw_{\omega'} = \frac{I^2}{\hbar^2\omega\,(2\pi)^2}\, e^{-2S} \sum(\sigma,\ \sigma')\, d\sigma', \qquad (1,20)$$

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$$\sum(\sigma, \sigma') = Z_0(4A\sqrt{\bar{N}(\bar{N}+1)})[6 + \sum_i \cos a_i(\sigma+\sigma')] + \\ + Z_0(2A\sqrt{\bar{N}(\bar{N}+1)})[(\sum_i(\cos\sigma a_i + \cos\sigma' a_i))^2 - \\ - 2\sum_i \cos a_i(\sigma+\sigma') - 12]. \quad (1,21)$$

is obtained for the differential polaron scattering cross section. From this expression the lifetime of the band states can be found:

$$\tau_b = \frac{\hbar^2\omega}{12\pi I^2} e^{2S} \frac{1}{I_0(4A\sqrt{\bar{N}(\bar{N}+1)}) - 1} \quad (1.22).$$

The band-theoretical treatment of the kinetic processes is not applicable at $l \ll a$ (l = free path, a = lattice constant). The criterion for this is $\frac{\hbar\omega}{\pi I}\exp A(2\bar{N}+1)\frac{1}{I_0 - 1} \approx 1$ (1.25). Mobility in the range where the band approximation is not applicable is calculated on the basis of electron transitions between localized states:

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Electrical conductivity of polar crystals ...

$$u = \frac{e\alpha^{3/2}}{2\hbar kT}\sqrt{\frac{\pi}{kTE^{*}}}\,e^{-\frac{E^{*}}{kT}}. \qquad (2,23).$$

The results agree well with the experiments. The authors thank Corresponding Member AS USSR V. G. Levich for his interest, and V. L. Bonch-Burevich, S. I. Pekar, and S. V. Tyablikov for discussions. There are 4 figures and 6 references: 2 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: R. P. Feynman. Phys. Rev., 84, 108, 1951; R. Kubo, Y. Toyozawa. Progr. Theor. Phys., 13, 160, 1955; J. Yamashita, T. Kurosawa. J. Phys. Chem. Sol., 5, 34, 1958.

4

ASSOCIATION: Institut elektrokhimii AN SSSR Moskva (Institute of Electrochemistry AS USSR, Moscow)

SUBMITTED: March 18, 1961 (initially) July 11, 1961 (after revision)

Card 3/3

DOGONADZE, R.R.

Semiclassic consideration of the problem of electron exchange in solutions. Dokl. AN SSSR 142 no.5:1108-1111 F '62.
(MIRA 15:2)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N.Frumkinym.

(Ion exchange)
(Chemistry, Physical and theoretical)

DOGONADZE, R.R.; CHIZMADZHEV, Yu.A.

Computation for the probability of an elementary act of certain heterogeneous redox reactions. Dokl. AN SSSR 144 no.5:1077-1080 Je '62. (MIRA 15:6)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N. Frumkinym.
(Oxidation-reduction reaction) (Electromotive force)

DOGONADZE, R.R.; CHIZMADZHEV, Yu.A.

Kinetics of some electrochemical redox reactions on metals. Dokl.AN SSSR 145 no.4:849-852 Ag '62. (MIRA 15:7)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N.Frumkinym.
(Oxidation-reduction reaction) (Electrochemistry)

DOGONADZE, R. R.; LEVICH, V. G.

"Present State of the Theory of Electron Transfers in Solutions."

Report presented at the 14th meeting CITCE, Intl. Comm. of Electrochemical Thermodynamics and Kinetics, Moscow, 19-25 Aug 63.

Institute of Electrochemistry, Academy of Sciences of USSR, Moscow

L 13217-63 EWT(1)/EWG(k)/EWT(m)/EDS/EEC(b)-2 AFFTC/ASD/ESD-3 Pz-4
AT/RH

ACCESSION NR: AP3000521 S/0020/63/150/002/0333/0336

AUTHOR: Dogonadze, R. R.; Chizmadzhev, Yu. A.

TITLE: The kinetics of some electrochemical oxidation-reduction reactions on semiconductors

SOURCE: AN SSSR. Doklady, v. 150, no. 2, 1963, 333-336

TOPIC TAGS: kinetics, oxidation-reduction reactions, semiconductors, anode polarization, electrochemistry

ABSTRACT: The present paper is a further development of a theoretical study of the kinetics of oxidation-reduction reactions on semiconductors which the authors carried out previously (DAN, 145, no. 4, 1962). By comparing the kinetics of a reaction on metals and semiconductors, it was possible to study the effect of the energy spectrum of a solid body upon kinetic mechanisms.

A reaction in the semiconductor was examined mathematically.

In examining currents under unbalanced conditions, the authors encountered a number of new mechanisms which are characteristic for semiconductors. The system was examined during anode polarization. Inasmuch as no special experiments were carried out with systems of the examined type, the authors make note of only a qualitative agreement of theory with experiment. "We express our appreciation to

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L 13217-63

ACCESSION NR: AP3000521

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Corresponding Member of the AN SSSR V. G. Levich for his consideration and constant interest regarding this work and also to Yu. V. Pleskov, who made a number of useful suggestions." Orig. art. has: 14 formulas and 1 figure.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry, Academy of Sciences SSSR)

SUBMITTED: 04Apr62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 001

Card 2/2

CHIZMADZHEV, Yu. A.; DOGONADZE, R. R.

"Nature of the electrical double layer between a metal and a molten salt."

report presented at 15th Mtg, Intl Comm of Electrochemical Thermodynamics and Kinetics, London, 20-26 Sep 64.

DOGONADZE, R.R.; CHIZMADZHEV, Yu.A.

Structure and capacity of the metal-fused salt separation boundary. Dokl. AN SSSR 157 no.4:944-947 Ag '64 (MIRA 17:8)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N.Frumkinym.

EWT(m)/EWG(m)/T/EWA(h) Pz-6/Pe

ACCESSION NR

TITLE: Kinetics of some oxidation-reduction react... a... electrolyte solution

TOPIC TAGS: semiconducting film, electrolysis, electrochemistry, ...

Abstract: The influence of the semiconductor properties of ... system metal - semiconductor film - electrolyte solution on ... kinetics of the system is considered for a simple model: a film represent... ing a ... homogeneous semiconductor with intrinsic conduction ... face layer; an oxidation-reduction reaction takes place on ... the ... and the entire potential drop in the electrolyte ... Helmholtz layer. The general expression for the ... ... remain the same as for a semicon... The tra... coefficients coincide in order of magnit...

Card 1/2

L 52852-65
ACCESSION NR: AP5015853

pondi[illegible] values for an infinite semiconductor. [illegible]
de[illegible] [illegible] film thickness. The [illegible]
function of the isolated metal and the isolato[illegible]
the film thickness. Orig. art. has 28 formulas and 1 graph.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR [illegible]
istry, Academy of Sciences, SSSR)

SUBMITTED: 07Oct63 ENCL: 00 SUB CODE: [illegible]

NO REF SOV: 003 OTHER: 000 JPRS

Card 2/2

KUZNETSOV, A.M.; DOGONADZE, R.R.

Stationary photoelectric effect in the system semiconductor - electrolyte solution. Izv. AN SSSR. Ser. khim. no.10:1885-1887 O '64. (MIRA 17:12)

1. Institut elektrokhimii AN SSSR.

DOGONADZE, R.R.; CHIZMADZHEV, Yu.A.

Formulation of the Bogoliubov equation for unary functions in the statistical theory of the electrical double layer. Zhur. fiz. khim. 38 no.12:2979-2984 D '64. (MIRA 18:2)

1. Institut elektrokhimii AN SSSR.

DOGONADZE, R.R.; KUZNETSOV, A.M.

Kinetics of redox reactions in the system impurity semiconductor - electrolyte solution. Elektrokhimiia 1 no.6:742-744 Je '65. (MIRA 18:7)

1. Institut elektrokhimii AN SSSR.

DOGONADZE, R.R.; KUZNETSOV, A.M.

Some steady-state processes in the system semiconductor - electrolyte solution. Elektrokhimiia 1 no.8:1008-1011 Ag '65. (MIRA 18:9)

1. Institut elektrokhimii AN SSSR.

DOGONADZE, R.R.; KUZNETSOV, A.M.; CHIZMADZHEV, Yu.A.

Kinetics of some heterogeneous reactions at the semiconductor - electrolyte interface. Zhur. fiz. khim. 38 no.5:1195-1202 My '64. (MIRA 18:12)

1. Institut elektrokhimii AN SSSR. Submitted June 8, 1963.

DOGONADZE, R.R.; KUZNETSOV, A.M.; CHERNENKO, A.A.

Theory of homogeneous and heterogeneous electronic processes in liquids. Usp.khim. 34 no.10:1779-1812 O '65.
(MIRA 18:11)

1. Institut elektrokhimii AN SSSR.

DOGONADZE, R.R.; KUZNETSOV, A.M.; CHERNENKO, A.A.

Theory of slow electrons in liquids. Elektrokhimiia 1 no.12:1434-1442 D '65. (MIRA 19:1)

1. Institut elektrokhimii AN SSSR. Submitted August 4, 1965.

L 24622-66 EWT(1)/EWT(m)/EPF(n)-2/EWP(j)/T/ETC(m)-6 IJP(c) GG/RM/WW

ACC NR: AP6012436 (A) SOURCE CODE: UR/0364/65/001/012/1434/1442

AUTHOR: Dogonadze, R. R.; Kuznetsov, A. M.; Chernenko, A. A.

ORG: Institute of Electrochemistry, Academy of Sciences, SSSR (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Theory of low-energy electrons in liquids

SOURCE: Elektrokhimiya, v. 1, no. 12, 1965, 1434-1442

TOPIC TAGS: electron mobility, polar crystal, liquid property, high temperature effect, low temperature effect, temperature dependence, electric conductivity

ABSTRACT: Recent data are given from the theory of electron mobility in polar crystals as a basis for explaining the physical mechanism responsible for electrical conductivity in liquids. The theory of electron mobility in polar liquids is qualitatively analyzed with no attempt to derive any new formulas. The problem of electron mobility in nonpolar liquids is studied in greater detail since there is no satisfactory theory for this case at the present time. A qualitative model is proposed for the structure of the electron energy spectrum in a nonpolar liquid and analytical expressions are derived for electron mobility as a function of temperature in this case. It is shown that the temperature dependence of electron mobility in nonpolar liquids is qualitatively similar to the case of small-radius polarons in polar liquids. At

UDC: 541.13 + 541.15

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ACC NR: AP6012436

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low temperatures, dispersion increases with temperature while the probability of electron migration decreases, which reduces mobility. On the other hand, mobility should increase with temperature when dispersion is high. We are grateful to corresponding member AN SSSR V. G. Levich for constant interest in the work, as well as to V. L. Bonch-Bruyevich, V. V. Tolmachev and Yu. A. Chizmadzhev for numerous discussions. Orig. art. has: 2 figures, 29 formulas.

SUB CODE: 07/ SUBM DATE: 04Aug65/ ORIG REF: 013/ OTH REF: 009

Card 2/2 PB

DOGONADZE T. I.

USSR / Farm Animals. Poultry. Q-4

Abs Jour: Ref Zhur-Biol., No 23, 1958, 105750.

Author : Mobuko, Yo. M., Gikashvili, K. N., Dogonadze, T. I.

Inst : Georgian Scientific Research Institute of Animal Husbandry and Veterinary Medicine.

Title : Development of High Producing Poultry Raising in the Georgian SSR.

Orig Pub: Byul. nauchno-tekhn. inform. Gruz. n.-i. in-ta zhivotnovodstva i vet., 1957, No 2, 7-9.

Abstract: No abstract.

L 3204-66 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5016306 UR/0190/64/006/012/2202/2202

AUTHOR: Babitskiy, B. D.; Dogoplosk, B. A.; Korner, V. A.; Lobach, M. I.; Tinyakova, Ye. I.; Chesnokova, N. N.; Yakovlev, V. A.

TITLE: Stereospecific polymerization of butadiene in the presence of pi-allylic complexes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 12, 1964, 2202

TOPIC TAGS: polymerization, butadiene, catalysis, macromolecular chemistry

Abstract: It was shown that the polymerization of butadiene in benzene solutions under the influence of catalytic systems based on pi-allylic complexes of nickel and metal halides ($TiCl_4$, VCl_4, WCl_6, $AlBr_3$, and $NiCl_2$) leads to the formation of a polymer with predominantly (up to 94%) cis-1,4-units. The stereospecificity of these catalysts does not depend on the nature of the metal in the Lewis acid. The polymerization temperature was 20-50° and the time 8-16 hours.

ASSOCIATION: none

SUBMITTED: 13Jul64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 000 OTHER: 000 JPRS

Card 1/1

GRITSENKO, A.P.; DOGOTAR', V.N.; YATSENKO, G.N.

Automatic device for measuring cardboard thickness.
Bum. prom. 36 no.10:21 O '61. (MIRA 15:1)

1. Chernovitskiy gosudarstvennyy universitet.
(Paperboard--Testing)
(Measuring instruments)

ROSCA, Gr.; CRISTEA, A.; DOGOTERU, Victoria; BEJAN, Raisa

Fishing lines and cords made of polypropylene and polyethylene monofilaments. Ind alim 14 no.9:366-369 S'63.

1. Intreprinderea de plase si unelte pescaresti, Galati (for Dogoteru, Bejan).

POPOV, Stoian, min. inzh.; RANGELOV, Georgi, inzh.; GENOV, Stefan, inzh.; DODOV, Nikolai, inzh.

Dressing of the lead--zinc ore from the Spoluka and Pechinsko deposits in heavy suspensions. Tekhnika Bulg 13 no.4:23-26

1. NIPRORUDA.
2. Member of the Board of Editors, "Tekhnika" (for Popov).

DOEDEVIC, Ivan, dipl. inz.

Analysis of static errors in measuring instruments with special emphasis on compensating systems. Automatika 5 no.2:112-116 '64.

1. Mihailo Pupin Institute Institute of Automation and Telecommunication, Belgrade.

ACCESSION NR: AP4023498 S/0069/64/026/002/0186/0189

AUTHORS: Dogadkin, B.A.; Fel'dshteyn, M.S.; Belyayeva, E.N.

TITLE: Crosslinking of rubbers under the influence of di-2-benzthiazyldisulfide

SOURCE: Kolloidny*y zhurnal, v. 26, no. 2, 186-189

TOPIC TAGS: benzthiazyldisulfide, sulfenamide, synthetic rubber, natural rubber, sodium butadiene, butadiene styrene, elemental sulfur addition, vulcanization, vulcanization temperature, rubber cross-linking, vulcanization accelerator, vulcanization reversion

ABSTRACT: The influence of this accelerator on sodium butadiene, butadienestyrene and natural rubber at vulcanization temperatures (143, 153, 163 and 173C) and the influence of elemental sulfur additions (0.1 - 2%) on the course of this reaction were studied. The cross-linking effect was determined by the degree of swelling in a xylene mixture after heating to the various temperatures. The results are graphed. The cross-linking effect of the accelerator was directly dependent upon the temperature and decreased in the above-mentioned

Card 1/2

ACCESSION NR: AP4023498

order of rubber compounds. No reversion was observed, even with natural rubber. Reversion occurred only upon addition of sulfur and increased with increasing sulfur additions and temperatures. This may be assumed to be accompanied by destruction of prior polysulfide bonds and formation of intramolecular cyclic structures. Synthetic rubbers were less subject to reversion, presumably because of the presence of side groups. For best vulcanization results with this accelerator, temperatures of 153-163C and minimal additions of elemental sulfur are recommended. Orig. art. has: 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promy*shlennosti,Moscow (Scientific Research Institute of Tire Industry)

SUBMITTED: 09Aug63 DATE ACQ: 15Apr64 ENCL: 00

SUB CODE: CH NR REF SOV: 007 OTHER: 000

2/ 2.

Card

SOLICH,J.; DOFKOVA, L.

Standards for supplying Czechoslovakian health services with pharmacy service. I. Hospital requirements for pharmacy services. Cesk. farm. 13 no.6:283-291 Jl'64

1. Katedra farmaceutickeho provozu farmaceuticke fakulty UK [University Komenskeho], Bratislava, a Fakultni lekarna, Brno.

SEDOV, K.R.; DOGAYEVA, Ye.Ye. (Irkutsk)

Work of the province cardiorheumatological room. Sovet. zdravookhr. 5:6-11 '63 (MIRA 17:2)

1. Iz kafedry gospital'noy terapii (zav. - dotsent K.R.Sedov) Irkutskogo meditsinskogo instituta i oblastnoy klinicheskoy bol'nitsy (glavnyy vrach P.G.Rudina).

232T40

USSR/Chemistry - Aluminum Sep 52

"Investigation of the Composition of Anode Gases During the Electrolysis of Molten Cryolite-Alumina," V. P. Mashovets, M. F. Dogramadzhi, Ye. M. Flerinskaya

"Zhur Prik Khim" Vol 25, No 9, pp 955-965

Authors state that before this work, the formation of pure CO_2 as a primary anode product had never been established experimentally in the electrolytic production of Al. A specially constructed large laboratory bath set up for the electrolysis of

(1) 232T40

molten cryolite-alumina permitted the generation of the primary anode gas, avoiding protracted contact of the gas with the carbon anode. An increase in temp and a decrease in the anodic increase in temp and a decrease in the anodic enriched the primary gas with carbon monoxide. The content of CO was also increased by using a carbon anode with high oxidizability. By using carbon with low chem activity and applying low temp and high current densities, a primary gas consisting of almost pure carbon dioxide was generated. In industrial single-anode baths, the av content of CO_2 in bath gases approached 55%-60%. The relation of the compn of anode gases to the above factors was confirmed, as well as to the width or the anode and to the time of taking the sample. At the time of the anode effect, a significant amt of gas of unknown compn with a high mol wt was found.

DOGRAMADZHI, M. F.

232T40

AUTHOR: Dogramadzhi, M.F. and Rudakov, V.N. 136-5-8/14

TITLE: Magnetic field and state of the surface of fused metal in the electrolytic bath. (Magnitnoe pole i sostoyanie poverkhnosti rasplavlennogo metalla v elektroliznoy vanne.)

PERIODICAL: "Tsvetnye Metally" (Non-ferrous Metals) 1957, No.5, pp. 50 - 54 (U.S.S.R.)

ABSTRACT: The object of the work described was to find ways of reducing the influence of magnetic forces in electrolyzers. The work was carried out jointly by the All-Union Aluminium-Magnesium Institute, the Leningrad Section of the Tyazhpromelektroproekt Organisation and the Leningrad Electro-technical Institute (Leningrad Elektrotekhnicheskoy Institut) in 1955-1956. Part of the work consisted of an analytical calculation of the magnetic fields in the electrolyzer bath. These calculations showed the part played by currents in the different parts of the bath in the generation of its general magnetic field and suggested ways of finding rational lead designs. The influence of current flowing in the leads is to disturb the symmetry in the distribution of the magnetic field, this being more noticeable in lower-power baths. Direct measurements of the magnetic field on working electrolyzers were made with the aid of a graphite-cased, water-cooled instrument. Results are tabulated for a 62 kA bath and similar measurements are said

Card 1/2

Magnetic field and state of the surface of fused metal in the electrolytic bath. (Cont.) 136-5-8/14

to have been carried out on a series of baths in the 60-75 kA range and on high power (125-150 kA) experimental baths. The shape of the metal surface in the bath under the electrolyte was measured by a contact method, results obtained for a 62 kA bath being illustrated; tabulated results show that continuous agitation of the metal surface occurred. Metal circulation was studied with the aid of radio-active cobalt and the movement of the metal is shown schematically. The results as a whole are considered to be insufficient for drawing technical-economic conclusions on the effects of the magnetic field. There are 9 figures, 2 tables and 7 references, 6 of which are Slavic.

Card 2/2

ASSOCIATION: All-Union Aluminium-magnesium Institute (VAMI)

AVAILABLE:

SOV/137-58-8-16639

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 56 (USSR)

AUTHOR: Dogramadzhi, M.F.

TITLE: An Investigation of the Contact Between Iron Anode Rod and Carbon Anode at High Temperature (Issledovaniye kontakta zheleznogo shtyrya s ugol'nym anodom pri vysokoy temperature)

PERIODICAL: Tr. Vses. n.-i. alyumin.-magn. in-ta, 1957, Nr 40, pp 261-276

ABSTRACT: Run-of-the-mill anode mass of the Urals Aluminum Plant consisting of 6.6% 3.2-mm fraction, 34.8% 0.84-mm, 14.4% 0.15-mm, 9.5% 0.075-mm, and 34.7% 0.075-mm undersize, with 30.0% Magnitogorsk tar (measured as % of solids) was used in the experiments. The rod (R) was cylindrical in form, 30 mm in diameter, and had a pointed tip 5 mm in diameter, the length of the conical portion being 80 mm. The specimen was fired to the given temperature at a rate of 100°C/hr, and it was then held at this temperature for 10 hrs, after which the resistance of the R-anode contact was measured. Preliminary determinations of the physicochemical properties of the anodes

Card 1/2

An Investigation of the Contact Between Iron Anode Rod (cont.)

showed that the quality of the experimental specimen hardly differs from that of anode specimens taken from a working bath. The R-anode contact resistance drops as temperature rises, as the electrical resistivity of the anode is 50 times as high as that of Fe at 950°C. The resistance of the contact does not vary with increase in current density. Measurement of contact resistance after rearrangement (RE) of the R was performed in a manner analogous to measurement prior to RE. The probe for taking the potential of the principal anode was not moved. The nature of the change in the resistance of the contact after RE of the R corresponds to the nature of the resistance of the contact before RE; the resistance declines as the temperature rises. Thus, the resistivity of the contact after RE of the R was, in ohms·cm^2, 0.083 at 700°C, 0.073 at 800°, 0.061 at 900°, 0.058 at 950°, and 0.053 at 1000°. The resistance of the segment measured was significantly higher than the resistance of the R-primary anode contact. If we subtract the value of the resistance prior to RE from its value after RE, we obtain the resistance of the contact as the result of RE. A result of the RE of the R is an increase in the R-primary anode resistance in the zone of the sinter cone due to the formation of an intermediate layer in the secondary anode and also due to supplementary contact therewith. The increase in the contact resistance leads in turn to an increase in the height of the sinter cone, and correspondingly to an increase in the depth of the bath.

Card 2/2 1. Anodes (Electrolytic cell)--Electrical properties 2. Anodes (Electrolytic cell)--Test methods I.G. 3. Iron--Performance 4. Carbon--Perfo...

AUTHOR: Dogramadzhi, M.F. SOV/136-58-5-9/22

TITLE: Electric Load on the Anode Pins of an Aluminium Electrolyser (Elektricheskaya nagruzka v anodnykh shtyryakh alyuminiyevogo elektrolizera)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 5, pp 50 - 53 (USSR)

ABSTRACT: Although considerable attention has been given recently to the energy losses in the anodes of aluminium electrolysers, little investigation has been made of effects taking place in a continuous anode. With the object of elucidating the distribution of the current between the pins in an electrolyser with an overhead lead two electronic recording potentiometers were connected into the circuits of the middle and corner pins of one level. The daily records (Figures 1 and 2) show considerable variations, as do the daily coverages over 58 days. The distribution between levels was measured for baths with side leads (Tables 1, 2) again showing considerable variation. The author suggests that his results should be used in the design of new electrolysers.

Card 1/2

SOV/136-58-5-9/22

Electric Load on the Anode Pins of an Aluminium Electrolyser

There are 2 figures and 2 tables.

ASSOCIATION: VAMI

Card 2/2 1. Electrolysis--Equipment 2. Anodes (Electrolytic cell)--Properties

DOGRAMADZHI, M. F., Cand Tech Sci - (diss) "Analysis of the characteristics of electrolyzers in high current supply for the recovery of aluminum." Leningrad, 1960. 11 pp; (Leningrad Polytechnic Institute im M. I. Kalinin); 200 copies; price not given; (KL, 19-60, 133)

DOGRAMADZHI, M.F.; GEFTER, S.E.; KULAKOV, A.I.

Magnetic field in the aluminum electrolysis plant. TSvet. met. 37 no.6:38-42 Je '64. (MIRA 17:9)

DOGRAMADZHI, M.F.; GEFTER, S.E.

Agitation of molten metal in aluminum electrolytic cells.
TSvet. met. 38 no.9:49-53 S '65.

(MIRA 18:12)

BOIANOV, L.; MEDAROVA, L.; DOGRAMADZHIEV, Iv.

Recent progress in the treatment of systemic scleroderma.
Suvr. med. 13 no.9:40-43 '62.
(SCLERODERMA)

DOGRAMADZHIEV, Iv.

Ombroderm, a Bulgarian sun protective preparation. Dermato vener Sofia 2 no.2:57-60 '63.

1. Chair of Skin and Venereal Diseases at the Higher Medical Institute, Sofia (Head: Prof. Kr. Balabanov).

DOGRAMADZHIEV, Iv.

Pathogenesis of photodermatoses with some critical notes on certain current classifications. Dermato vener Sofia 2 no.3: 115-119 '63.

1. Iz katedrata po kozhni i venericheski bolesti pri VMI - Sofiia (rukov. na katedr. prof. d-r L.Popov).

DOGRAMADZHIEV, Iv.

Problem of pigmentation caused by ultraviolet and visible rays.
Dermato vener Sofia 3 no.2:82-85 '64.

1. Chair of Skin and Venereal Diseases at the Higher Medical Institute, Sofia (Head of the Chair: Prof. Kr. Balabanov).

BALABANOV, K.; DOGRAMADZHIEV, I.

Apropos of the treatment of vitiligo. Suvr. med. (Sofiia) 15 no.5:28-31 '64

DOGRAMADZI, Natalija N.; MATIC, Zorka B.

Effect of the Li_2O and Ga_2O_3 additions on the catalytic activity of ZnO and NiO in the exchange reaction H_2/HDO. Bul Inst Nucl 11:155-162 '61.

1. Institute of Nuclear Sciences "Boris Kidrich," Department of Physical Chemistry, Vinca.

PODHORSKY, Rikard, dr ing.

"Laboratory manual" by S. Asperger, N. Belegisanin, D. Cvjeticanin, Z. Dizdar, N. Dogramadzi, I. Filipovic, M. Juric, M. Mirnik, M. Petrovic, P. Sabioncello, K. Schulz, and V. Vukanovic. Edited by Ivan Filipovic and Petar Sabioncello. Reviewed by R. Podhorsky. Kem ind 10 no.12:486-487 D '61.

1. Clan Redakcionog odbora, "Kemija u industriji".

ANDREYEV, Vl.; VULKOV, V.S. (Bolgariya, Sofiya, ul. Graf Ivantsev, 49); PENCHEV, P.; KUTINCHEV; MUSTAKOV; DOGRAMADZHIYEV; TOLEV; PORFIROV

Distribution and results of treatment of skin cancer in the Bulgarian People's Republik. Vop.onk. 7 no.5:35-41 '61. (MIRA 15:1)

1. Iz nauchno-issledovatel'skogo onkologicheskogo instituta (dir. - prof. Ves. Mikhaylov), Nauchno-issledovatel'skogo kozhno-venerologicheskogo instituta (dir. - prof. P. Popkhristov) kafedry kozhno-venericheskikh zabolevaniy Vysshego meditsinskogo instituta v Sofii (zav. - prof. L. Popov) i kafedry kozhno-venericheskikh zabolevaniy Vysshego meditsinskogo instituta v Plovdive (zav. - prof. Buchvarov).

(BULGARIA--SKIN--CANCER)

POPOV, L.; DOGRAMADZHIEV, Iv.; PENEV, D.

Local anesthetic effect of quinine-urea. Suvrem med., Sofia no.4/5: 111-120 '61.

1. Iz katedrata po kozhni i venerichni bolesti pri Visshiia meditsinski institut, Sofiya. (Rukovoditel na katedrata prof. L. Popov.) i Katedra po anatomiia na choveka pri Visshiia meditsinski institut, Sofiya (Rukovoditel na katedrata prof. D. Kadanov.)

(QUININE anesth & analg)
(UREA anesth & analg)

DOGRAMADZHIEV, Iv.

BULGARIA

L. BOIANOV, L. HRISTOVA and Iv. DOGRAMADZHIEV [Affiliation not given]

"Advances in the Therapy of Systemic Scleroderma."

Sofia, Suvremenna Meditsina, Vol 13, No 9, 1962; pp 40-43.

Abstract: Review of the literature on treatment of multiple sclerosis, with some comments from personal experiences, as on relaxin which, as relaxine of the French company "Substantia" was used by authors in 1 case with success; no side effects; EDTA; stigmasterol; PABA, and many other drugs. According to the authors, over 50 different therapeutic methods have been advocated in various recent publications in the world literature including some Bulgarian advocates of nivalin; but no treatment seems to be universally successful. 37 Western, 1 Soviet, 1 Bulgarian references.

1/1

DOGRAMADZHYAN, A. D., CAND BIO SCI, "~~DERIVATION~~ Production OF OIL AND ENOTANIN FROM GRAPE SEEDS BY THE METHOD OF SIMULTANEOUS EXTRACTION." YEREVAN, 1961. (ACAD SCI ARSSR. DEPT OF BIO SCIENCES). (KL-DV, 11-31, 214).

DOGRAMADZI, NATALIJA Yugoslavia CA: 47:12119

"Mass spectrometric determination of deuterium."

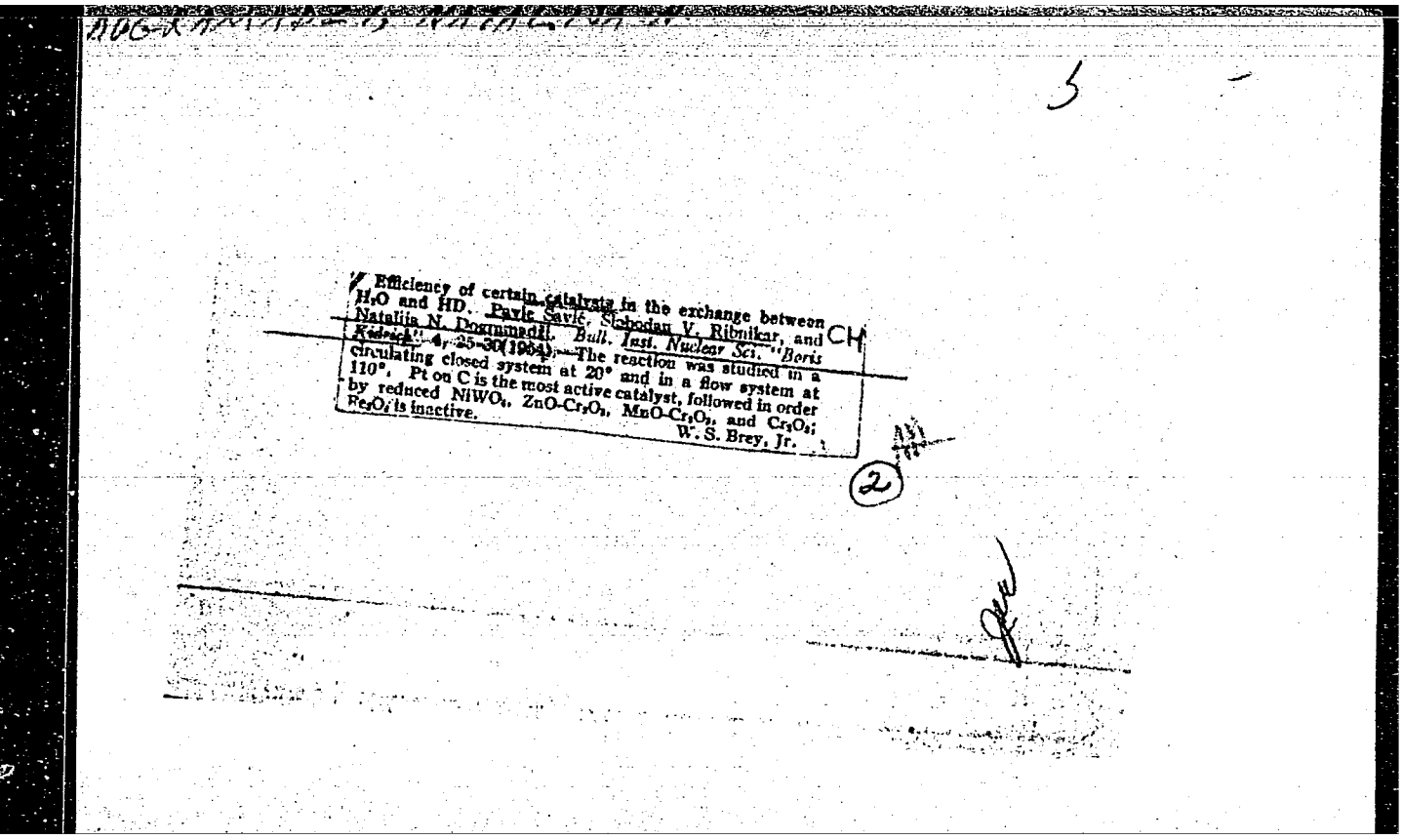
Rec. trav. inst. recherches Structure Matiere (Belgrade) 2, 17-20 (1953).

DOGRAMADZI, NATALIJA

Yugoslovia CA: 47:11961

"The relative intensities of ions formed by the ionization of methane in a mass spectrometer."

Rec. trav. inst. recherches Structure Matiere (Belgrade) 2, 21-2 (1953).



Efficiency of certain catalysts in the exchange between H_2O and HD. Pavle Savić, Slobodan V. Ribnikar, and Natalija N. Dogmundžić. *Bull. Inst. Nuclear Sci. "Boris Kidrič"*, 4, 25–30 (1954).—The reaction was studied in a circulating closed system at 20° and in a flow system at 110°. Pt on C is the most active catalyst, followed in order by reduced $NiWO_4$, ZnO-Cr_2O_3, MnO-Cr_2O_3, and Cr_2O_3; Fe_2O_3 is inactive.
W. S. Brey, Jr.

DOGRAMADZI, N.N.

1 7

"Mass spectrometric detection of free methyl radicals in methane subjected to electric discharge." Natalija N. Dogramadzi and Kiro F. Zmbov (Inst. Nuclear Sci. "Boris Kidrich," Belgrade). *Bull. Inst. Nuclear Sci. "Boris Kidrich"* (Belgrade) 9, 105–9(1959).—CH_4 was subjected to a high-frequency electrodeless discharge in the fast flow system of a mass spectrometer, and the mass ratio 15/16 was observed. It was shown that the increase in this ratio is due to the formation of CH_3 radicals. Alfred L. Moses

4E3d

2 May

7

DOGRAMADZI, Natalija N.
SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degrees: not given

Affiliation: Department of Physical Chemistry, Institute of Nuclear Sciences "Boris Kidrich"

Source: Belgrade-Vintcha, Bulletin of the Institute of Nuclear Sciences "Boris Kidrich", Vol 11, Mar 1961, pp155-162.

Data: "Effect of Li_2O and Ga_2O_2 Additions on the Catalytic Activity of ZnO and NiO in the Exchange Reaction H_2/HDO."

Co-author:

MATIC, Zorka B., Department of Physical Chemistry, Institute of Nuclear Sciences "Boris Kidrich".

18(5) SOV/128-59-3-20/31

AUTHOR: Vinnichenko, P.G. Candidate of Technical Sciences, Ponomareva, Ye.L., Dogmatyrskaya, A.P. Engineers

TITLE: From the Experiences Gained in Casting of Products in Molding Boxes.

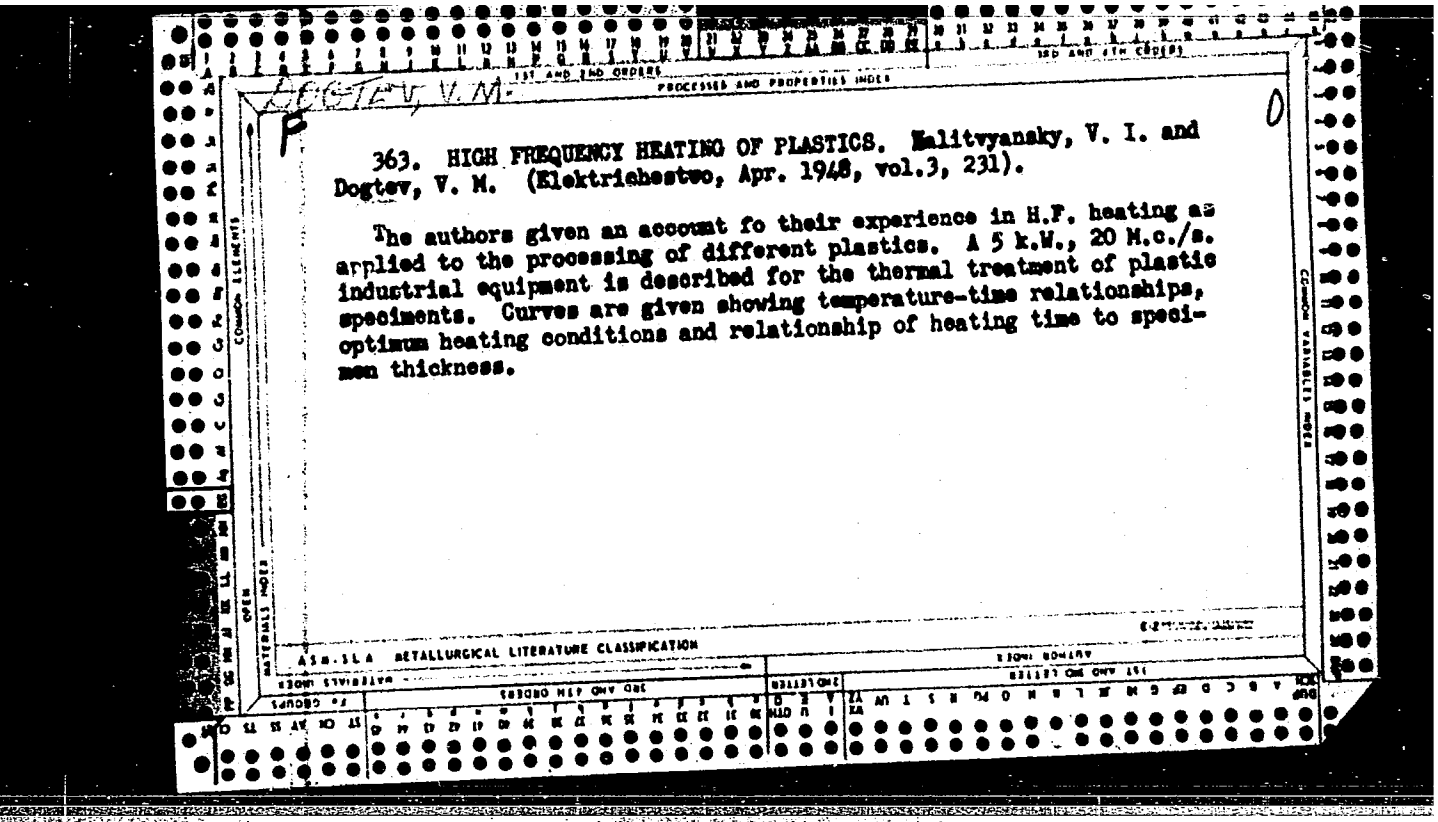
PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 3, pp 44-45 (USSR)

ABSTRACT: At the railway wagon plant at RIGA new types of molding boxes have been designed. The molding box frames have an inner dimension of 300 x 420 mm and serve for castings from 12 to 15 kg. Molding boxes and patterns are cast from cast iron. The production method for the molding boxes and patterns, together with the various tests this plant had to make to achieve final results, are given. Instead of sand, crushed cast iron scrap with a diameter of 1 to 1,5 mm has been used as a molding material. The plant pours a row of brake components from cast iron type S CH 15-32, like oil distributors operating at 10 atmospheres air and 15 atmosphere water pressure. To pour these oil distributors by

Card 1/2

From the Experiences Gained in Casting of Products in Molding Boxes

means of cast iron mold boxes formerly sand had been used as the core forming material. This method resulted in 50% rejected parts. Following the new molding box system and by adding a resign type mix to the core forming material the production has definitely improved. Practice showed that these molding boxes made of cast iron result in far cleaner surfaces of the casts than those made of molding sand. By applying this new method the plant saved 43.000 Rubles during 1957. There are 5 diagrams.



DOGTEV, V.M.

PROCESSES AND PROPERTIES INDEX

363. HIGH FREQUENCY HEATING OF PLASTICS. Malitvyansky, V. I. and Dogtev, V. M. (Elektrichestvo, Apr. 1948, vol.3, 231).

The authors given an account fo their experience in H.F. heating as applied to the processing of different plastics. A 5 k.W., 20 M.c./s. industrial equipment is described for the thermal treatment of plastic speciments. Curves are given showing temperature-time relationships, optimum heating conditions and relationship of heating time to specimen thickness.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR/Microbiology. Technical Microbiology F

Abs Jour : Ref Zhur-Biol., No 13, 1958, 57571

Author : Dogtyrova M. G.
Inst : Novosibirsk Agricultural Institute
Title : Variability of the Microflora in the Fermantation Process of Silage

Orig Pub : Tr. Novosivirsk. c-kh, in-ta, 1956, 10, 157-161

Abstract : More free lactic acid and lactic acid bacteria were found in corn silage than in silage of various grasses. When the silage matured the normal replacement of cocci forms by bacillus-like forms of lactic acid bacteria was observed. The development of putrofection bacteria, yeast, and bacteria of the group coli-aerogenes was more rapidly suppressed in corn silage. The author concludes that both of the studied silages are of high quality.

Card 1/1

DOGURO, K. KH.

36265 Organizatsiya truda I rabota zven'yev v kolkhozakh braginskogo rayona. (Poles. Obl.) Izvestiya akad nauk bssr, 1949, No. 5, s. 139-47

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

DOGUZHAYEV, V.B.

Vertical zonality of economic geography and the distribution of population in the Kabardino-Balkar A.S.S.R. Vest. Mosk. un. Ser. 5: Geog. 20 no.6:25-33 N-D '65. (MIRA 19:1)

1. Kafedra ekonomicheskoy geografii SSSR Moskovskogo gosudarstvennogo universiteta. Submitted June 21, 1965.

DOGVAL', Viktor Ivanovich; LIVSHITS, Erik Abramovich; LYSOCHENKO, Aleksandr Alekseyevich; NADEZHIN, Konstantin Nikolayevich; NOVOZHILOV, Yuriy Ivanovich; SOKOLOV, Nikolay Aleksandrovich; FEDOSEYEV, Oleg Vasil'yevich; YASKUNOV, Nikolay Pavlovich; MAGIROVSKIY, N.P., red.; PANKRASHOV, A.P., red.; POD"YEL'SKAYA, K.M., tekhn. red.

[TDT-40M diesel timber-skidding tractor] Trelevochnyi traktor TDT-40M. Pod red.N.P.Magirovskogo. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1961. 355 p. (MIRA 14:10)
(Tractors--Design and construction)

DOHALEK, R.

Relation between the time of construction and efficiency of investments. p. 68

CHEMICKE PRUMYSL. (Ministeratvo chemickeho prumyslu) Praha, Czechoslovakia
Vol. 9 No. 2, Jan. 1959

Monthly List of East European Accessions, (EEAI) LC, Vol. 8, No. 7, July 1959
Uncl.

DOHALIK, KAZIMIERZ

POLAND / Chemical Technology. Chemical Products and Their Application. Water Treatment. Sewage water H-5

Abs Jour : Ref. Zhur. - Khimiya, No 2, 1958, No 5086

Author : Dohalik Kazimierz

Inst : Not Given

Title : Ozonozation of Water

Orig Pub : Gaz, woda, techn. sanit., 1957, 31, No 4, 148-150

Abstract : A review.

Card : 1/1

DOHAN I.

Distr: 4E3c/4E3d

1
2

Ho. Determination of the ratio of photon and electron numbers in the extensive showers of cosmic radiation by means of a Wilson chamber/Pl. Dohán, T. Gémesy, T. Sándor, A. Somogyi. /A Magyar Tudományos Akadémia Központi Fizikai Kutató Intézet Közleményei. (Proceedings of the Central Research Institute for Physics of the Hungarian Academy of Sciences). Vol. 5, 1957, No. 5, pp. 461—468, 1 fig., 2 tabs.

Seven lead plates of 33 mm overall thickness were mounted in a Wilson chamber of 300 sq. cm effective area. The chamber was triggered by an extensive shower apparatus. The photographs were evaluated by counting the number of primary electrons penetrating the chamber and the number of electron pairs from the plates due to primary photons. After correcting for the possible number of photons without secondaries the ratio of the number of photons to that of electrons in the extensive air showers was found to be $\alpha = 1.16$ at 84 MeV primary photon energies. This value is compared with the data obtained with GM tube equipment by the authors and by researchers abroad.

RB
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DOHAN I.

HUNGARY/Nuclear Physics - Cosmic Rays. C

Abs Jour : Ref Zhur Fizika, No 9, 1959, 19886

Author : Dohan, I., Gemesy, T., Sandor, T., Somogyi, A.

Inst : Central Research Institute for Physics, Budapest, Hungary

Title : Determination of the Ratio of the Number of Photons and Electrons in Extensive Atmospheric Showers of Cosmic Radiation with the Aid of a Cloud Chamber.

Orig Pub : Acta phys. Acad. scient. hung., 1958, 9, No 1-2, 97-103

Abstract : Seven plates of lead with a total thickness of 33 mm were placed in a cloud chamber having an effective area of 300 cm^2. The chamber was controlled by means of apparatus for extensive atmospheric showers. The primary electrons and the electron-positron pairs were counted. Taking into account the correction necessitated by the penetrating photons, the authors have obtained the ratio of the

Card 1/2

HUNGARY/Nuclear Physics - Cosmic Rays. C

Abs Jour : Ref Zhur Fizika, No 9, 1959, 19886

number of photons to the electrons in extensive atmospheric showers, equal to 1.16 ±0.04.

Card 2/2

DOHAN, Istvan; SZERDAHELYI, Gyorgy

Hungarian-made radio and television series. Musz elet 18 no.21: 1,12 10 O '63.

DOHANICS, Sandor, dr.; EISERT, Arpad, dr.

Experiences with the treatment of acute gastric hemorrhage. Magy. sebesz. 16 no.1:37-47 Mr '63.

1. Szabolcs-Szatmarmegyei Korhaz (Igazgato: Lengyel Ferenc dr.) I. sz. Sebeszeti Osztalyanak (Foorvos: Eisert Arpad dr.) kozlemenye.
(HEMORRHAGE, GASTROINTESTINAL) (STOMACH ULCER) (STOMACH NEOPLASMS) (GASTRITIS) (ESOPHAGEAL VARICES) (LEUKEMIA) (HYPERTENSION) (ANEMIA, SPLENIC) (HEMOPHILIA) (POLYPI) (LAPAROTOMY)

BENISKA, Jozef, doc., inz., ScC.; STAUDNER, Emil, inz.; STOKLASA, Karol; MOSNY, Jaroslav; DOHANYOS, Juraj

Cacutchouc modification. Pts. 3-4. Chem zvesti 17 no.5:330-345 '63.

1. Katedra organickej technologie, Slovenska vysoka skola technicka, Kollarovo namesti 2.

L 17511-63 EPR/EWP(j)/EPF(c)/BDS AFFTC/ASD Ps-4/Pt-4/Pr-4 RM/WW

ACCESSION NR: AP3001797 Z/0043/63/000/005/0337/0345 75

AUTHOR: Staudner, E. (Engineer), Beniska, J. (Docent, Engineer, Science Candidate), Stoklasa, K., Mosny, J., Dohanyos, J. 72

TITLE: Modifications of rubbers (Part 4). Study of the composition of mixtures resulting from modifications of butadiene-styrene rubber by polystyrene [presented at the high polymer chemistry conference in Smolensk 12-15Sep1962]

SOURCE: Chemicke zvesti, no. 5, 1963, 337-345

TOPIC TAGS: synthetic rubber solubility, synthetic rubber solvent, chloroform rubber solvent, acetone solvent separation, selective precipitation, precipitation control, photocolorimeter

ABSTRACT: The article describes a method for separating individual components in the mixtures of butadiene-styrene rubbers modified by polystyrene. A mixture of methanol with acetone in ratios of 1:3 to 1:9 is suitable for the separation of polystyrene from the rubber; this mixture precipitates polystyrene from a solution in benzene while rubber remains in solution. Pure methanol or pure acetone do not give satisfactory results; neither do mixtures in other

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proportions than those stated. Petroleum ether precipitates only polystyrene from benzene solution; precipitation starts when the amount of petroleum ether reaches the amount of benzene present, and is completed at a ratio of benzene 3 to petroleum ether 7. Synthetic rubbers trade name Polysar-Krylen NS and Vestyron N were studied according to the method described; changes occurring as a function of the duration of mixing were noted. Increase of mixing time causes increase in the amount of copolymers. The method was checked for selectivity of precipitation of components by measuring extinction with a photocolorimeter. Orig. art. has: 7 figures and 2 tables.

ASSOCIATION: Katedra organickej technologie Slovenskej Vysokej Skoly Technickej, Bratislava (Chair of Organic Technology of the Slovak Technical University)

SUBMITTED: 05Oct62 DATE ACQ: 25Jun63 ENCL: 00

SUB CODE: CH, IE NO REF SOV: 003 OTHER: 011

Card 2/2

DOHAR, Istvan, okl.gepeszmernok

Advice about pipelines. Ipari energia 2 no.6:135-136 Je '61.

1. Hoenergiagazdasagi es Tervezo Vallalat.

DOHAR, Istvan, okl.gepeszmernok

Advice about pipelines; curved pipe forms. Ipari energia 2 no.7:154-155 Jl '61.

1. Hoenergiagazdasagi es Tervezo Vallalat.

DOHAR, Istvan, okl.gepeszmernok

Advice about pipelines. Ipari Energiagazdalkodas 2 no.11: 251-255 N '61.

DOHAR, Istvan, okl.gepeszmernok.

Hot water stream in heat power transmission. Ipari energia 3 no.1/2:18-23 Ja-F '61.

1. Hoenergiagazdasagi es Tervezo Vallalat.

DOHAR, Istvan, okleveles gepeszmernok

Simplified determination of the calculation values of distance heating pipes. Ipari energia 1 no.5-6:168-111 N-D '60.

1. Hoenergiagazdalkodasi es Tervezo Vallalat.

DOHAR, Istvan, okleveles gepeszmernok

Penalties concerning heat supply. Ipari energia 4 no.1: 23-24 Ja'63.

1. Hoenergiagazdasagi es Tervezo Vallalat: "Ipari Energiagazdalkodas" szerkeszto bizottsagi tagja.

DOHAR, Istvan, okleveles gepeszmernok

Weldable pipe compensator with stuffing boxes. Energia es atom 16 no.6:272-273 Je '63.

1. HOTERV.

DOHAR, Istvan, okleveles gepesamernok

Heat exchanger and heat exchanger block applicable in distance heat supply. Energia es atom 16 no.8:347-352 Ag '63.

1. Hoterv.

DOHIAS, B.

CZECHOSLOVAKIA / Physical Chemistry. Chemistry of Colloids. Dispersed Systems. B

Abs Jour: Ref Zhur-Khimiya, No 19, 1958, 63960

Author : Dohias Bohuslav
Inst : Not given
Title : Flotability of Fluorite and Baryta. III. Flotation by Means of N-Bromides of Alkylpyridine.

Abstract: The conditions were investigated of the selective flotation of fluorite (I) and baryta (II) by various N-Bromides of alkylpyridine (BA) in the character of collectors, namely with bromide N-hexyl-(III), N-nonyl-(IV), N-undecyl-(V) and N-cetylpyridine (VI). I is floated with every BA, but II only with VI. The conditions of the

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CZECHOSLOVAKIA / Physical Chemistry. Chemistry of Colloids. Dispersed Systems. B

Abs Jour: Ref Zhur-Khimiya, No 19, 1958, 63960

Abstract: selective flotation of I and II were studied by means of VI, the influence of the length of the BA chain on the change of the critical concentration of these collectors for I, and the dependence of the critical pH on the logarithm of VI concentration. At pH 3·5-7·5, the flotation of II is practically absent, and complete separation of I and II can be achieved. Report II, see RZhKhim, 1958, 42788.

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